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TRANSMITTAL OF APPEAL BRIEF

Docket No.
GROTH 3.3-026

In re Application of: N. Lennart Eriksson, Lars-Otto Sislegard, and Kurt Schedin

Application No.
09/890,139

Filing Date
November 13, 2001

Examiner
S. C. Yao

Group Art Unit
1733

Invention: METHOD AND ARRANGEMENT FOR THE PRODUCTION OF
LIGNOCELLULOSE-CONTAINING BOARDS

TO THE COMMISSIONER FOR PATENTS:

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Dated: March 24, 2006

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Docket No.: GROTH 3.3-026
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Eriksson et al.

Application No.: 09/890,139

Group Art Unit: 1733

Filed: November 13, 2001

Examiner: S. C. Yao

For: METHOD AND ARRANGEMENT FOR THE
PRODUCTION OF LIGNOCELLULOSE-
CONTAINING BOARDS

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants hereby file this brief on Appeal to appeal from the final rejection of claims 6,7,8 mailed September 26, 2005.

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REAL PARTY(IES) IN INTEREST

The real party in interest is Valmet Fibertech AB of Sundsvall, Sweden, the assignee of the above-referenced application.

RELATED APPEALS AND INTERFERENCES

To the best of Applicants' current knowledge, there are no related appeals or interferences pending before the U. S. Patent and Trademark Office regarding this United States patent application.

STATUS OF CLAIMS

Claims 1-5 have been canceled from the present application. Claims 6-10 are pending in the present application. Claims 9 and 10 stand withdrawn from consideration. Claims 6-8 stand rejected and are the subject of this appeal. Applicants attach a clean copy of the claims hereto as an Appendix.

STATUS OF AMENDMENTS

There are no previously unentered amendments and no amendment is submitted herewith.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention as set forth in claims 6-8 is directed to a method for continuously producing lignocellulose-containing boards comprising providing a mat of disintegrated, glue-coated and dried lignocellulose-containing material, pressing the mat into a board in a steam injection press, conditioning the board by drawing a predetermined volume of air having a predetermined moisture content at a predetermined temperature through the

board by means of suction applied through the board, and grinding the conditioned board to a final thickness directly following the conditioning step.

In a preferred embodiment, the conditioning of the board comprises a first conditioning of the board by drawing a first predetermined volume of air having a first predetermined moisture content at a first predetermined temperature through the board in a first direction by means of suction applied through the board in a first direction by means of suction applied through the board, and including a second conditioning of the board by drawing a second predetermined volume of air having a second predetermined moisture content at a second predetermined temperature through the board in a second direction by means of suction applied through the board, wherein the second direction is opposite to the first direction.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

- A. Whether claims 6-7 are unpatentable under 35 U.S.C. 103(a) as being obvious over WO 97/04932 ("WO '932") in view of either U.S. Patent No. 5,643,376 to Gerhardt et al. ("Gerhardt") or U.S. Patent No. 5,063,010 to Fischer et al. ("Fischer"), WO 98/50208 ("WO '208"), U.S. Patent No. 5,125,812 to Held ("Held"), and optionally further in view of U.S. Patent No. 4,009,073 to Pozzo et al. ("Pozzo").
- B. Whether claim 8 is unpatentable under 35 U.S.C. 103(a) as being obvious over WO 97/04932 ("WO '932") in view of either U.S. Patent No. 5,643,376 to Gerhardt et al. ("Gerhardt") or U.S. Patent No. 5,063,010 to Fischer et al. ("Fischer"), WO 98/50208 ("WO '208"), U.S. Patent No. 5,125,812 to Held ("Held"), and optionally

further in view of U.S. Patent No. 4,009,073 to Pozzo et al. ("*Pozzo*"), and further in view of either U.S. Patent No. 4,883,546 to Kunнемeyer ("*Kunнемeyer*") or U.S. Patent No. 4,356,763 to Hagstrom ("*Hagstrom*").

ARGUMENT

The Examiner rejected claims 6 and 7 under 35 U.S.C. 103(a) as being unpatentable over WO '932 in view of either *Gerhardt* or *Fischer*, WO '208, *Held*, and optionally further in view of *Pozzo*. To establish a *prima facie* case of obviousness under § 103, the references relied upon for rejection must suggest the entirety of the claimed invention, and hence, "the prior art reference (or references when combined) must teach or suggest all the claim limitations." M.P.E.P. § 2143.

WO '932, *Gerhardt*, *Fischer*, WO '208, *Held* and *Pozzo* in combination do not make out a *prima facie* case of obviousness with respect to claims 6 and 7 because these references, even if taken in combination, do not teach or suggest the recitation of conditioning the board by drawing a predetermined volume of air having a predetermined moisture content at a predetermined temperature through the board by means of suction, or the recitation of grinding the conditioned board, and, accordingly, do not teach the invention as a whole.

The object of the present invention is to obtain a stabilized fiberboard such that dimensional stability is obtained in the continuous dry production process, thereby making it possible to grind the fiberboard to a final thickness as part of the continuous dry process. Thus, it is made possible to produce a final product with a final thickness directly in the same production line that starts with the forming of a mat, and continues without any intermediate storing during the

process. Consequently, it is a continuous process from mat formation to obtaining a dimensionally stable product with a final thickness.

The Examiner admits that WO '932 is silent with regard to how to treat a board to effectively achieve a desired moisture content during a post-conditioning operation. (Official Action dated 9/26/05 p. 3.) Indeed, the Examiner concedes that WO '932 does not teach the claimed recitation, "conditioning said board by drawing a predetermined volume of air having a predetermined temperature through said board by means of suction applied through said board." (Id.)

The Examiner argues that this limitation would be obvious in the art to post-condition a board by subjecting the board to a heated air having a predetermined moisture content, using for example, a post gas treatment similar to the method/apparatus disclosed in WO '208. WO '208 teaches treating a board-like material by moving it through a gas agent treatment zone; it is not directed to a process for making lignocellulosic boards. None of the references cited by the Examiner contain any teaching, suggestion or motivation to combine the treatment process of WO '208 with a process for making lignocellulose-containing boards. Thus, such combination is improper. Moreover, WO '208 lacks any teaching with respect to the gaseous treatment agent being a predetermined volume of air.

Moreover, even if such combination was proper, the claimed invention would not have been produced, as set forth above, and in more detail below. The Examiner contends that it is well known in the art to continuously manufacture a fiber board, where the mat is treated with a heated air having a predetermined moisture content in a conditioning zone so as to

form a conditioned mat having a desired moisture content, based on the teachings of either *Gerhardt* or *Fischer*.

Gerhardt teaches a method of preheating wood particles in the production of fiber or particle board. In the method of *Gerhardt*, a particle mat for pressing into a pressed board is heated by passing treatment air coming from an air conditioning system through the *mat*. In contrast, claim 6 requires drawing a predetermined volume of air having a predetermined moisture content through the board so as to condition the *board*. That is, in the invention of claim 6, air is drawn through the board so as to condition the board, which has already been compressed from a mat of lignocellulosic material, while *Gerhardt* is directed to a method where air is used to preheat a mat of wood particles, before it is compressed into a board. Moreover, the method of *Gerhardt* does not use suction to apply air to the mat of wood particles. Indeed, *Gerhardt* is silent with respect to this element of claim 6.

Likewise, the method of *Fischer* utilizes a step of preheating a *mat* of fibers or chips to make compression easier. There is no disclosure that a predetermined volume of air having a predetermined moisture content at a predetermined temperature can be drawn through the already compressed board to condition the board, let alone a disclosure that air can be drawn through the board by means of suction.

Thus, neither *Gerhardt* nor *Fischer* add anything to the primary reference, WO '932. However, even if they were combined, none of the references cited by the Examiner provides the necessary suggestion or motivation to combine the teachings of *Gerhardt* or *Fischer* with the steam injection method of WO '932. Nor is it proper to combine the teachings of *Gerhardt* or *Fischer* with the teachings of WO '208.

The Examiner also contends that in accordance with the teachings of *Pozzo*, it is old in the art to moisturize a fibrous board to an in-line post-treatment operation by subjecting the board to a hot humidified air. However, *Pozzo* teaches an in-line humidification process where hardboard is humidified or moisturized following a bake treatment in order to prevent warping and buckling of the hardboard due to the dryness of the hardboard after the formation steps. *Pozzo* does not teach drawing air through the board by means of suction, as required by claim 6; *Pozzo* merely describes a process whereby hardboard absorbs moisture for the humidification process.

Moreover, *Pozzo* does not even teach a continuous process inasmuch as the hardboard of *Pozzo* is baked in an oven for from 2.5 to 4 hours, and then treated in a humidified chamber for 2.5 to 8 hours. Thus, regardless of the deficiencies of *Pozzo* as a secondary reference, it is improper to combine this reference with the primary reference, WO '932, because there is no suggestion, motivation or teaching in any of the references cited to combine the teachings of the continuous process of WO '932 with the non-continuous process of *Pozzo*. Additionally, the teachings of *Pozzo* extend only to wet processes of manufacturing hardboard, and this reference expressly states that fiber handling and mat forming techniques differ from wet process methods because the fiber is handled in air and not in water. Again, there is no suggestion, motivation or teaching in any of the references cited to combine the teachings of the dry process of WO '932 with the wet process of *Pozzo*. Therefore, such combination is improper.

In sum, none of the secondary references teach or suggest the recitation of drawing a predetermined volume of air having a predetermined moisture content through a board so as to

condition the board in a process for making lignocellulose-containing boards. Thus, these references, even if taken in combination, do not teach the invention as a whole. Therefore, Applicants respectfully request that this rejection be reversed.

All of the claims at issue include the claim limitation "grinding said conditioned board to a final thickness directly following said conditioning step," which the Examiner admits is not found in the primary reference, WO '932. (Official Action dated 9/26/05 p. 4.) To address this limitation, the Examiner states that it would have been obvious in the art to subject a post-treated/conditioned board to a grinding operation because it is a notoriously common practice in the to grind a board to its final thickness as allegedly exemplified by *Held*. *Held* discloses an apparatus for making wood panels in which microcapsules containing hardener are introduced into the wood fleece before compacting to improve the structural properties of wood panels. The microcapsules are destroyed during compaction and hardener is released into the fleece, curing the board. The apparatus described by *Held* includes a double band press for first compacting a fleece of particles and then pressing the compacted fleece into a panel. *Held* discloses that a chip board web is ground to its final dimensions in a grinding station in a continuous fiberboard manufacturing process. However, there is no teaching, suggestion or motivation in any of the references cited to combine the teachings of *Held*, a two-step compression process using a double band press with the process of WO '932, which teaches a single step compression process using compression rollers. Additionally, there is no teaching, suggestion or motivation in any of the references cited to combine the teachings of *Held* with the teachings of any of the references that allegedly teach drawing a predetermined volume of air having a predetermined moisture content through the board

so as to condition the board using suction means. Thus, such combination is improper, and the Examiner's *prima facie* case of obviousness fails. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested. Thus, on this basis as well, Applicants respectfully request that this rejection be reversed.

Claim 7 includes all of the recitations of claim 6, and is not obvious in view of the cited references for at least the reasons stated above. Additionally, since there is no teaching, suggestion or motivation to combine the teachings of WO '932, *Gerhardt*, *Fischer* or *Held* with the teachings of WO '208, there is no incentive for one in the art to subject the board to a first and second conditioning by drawing a first predetermined volume of air having a first predetermined moisture content at a first predetermined temperature through said board in a first direction by means of suction applied through said board, and a second predetermined volume of air having a second predetermined moisture content at a second predetermined temperature through said board in a second direction by means of suction applied through said board, wherein the second direction is opposite to the first direction, as required by claim 7. Therefore, Applicants respectfully request that this rejection be reversed.

Claim 8 stands rejected under 35 U.S.C. 103(a) as being obvious over WO '932 in view of either *Gerhardt* or *Fischer*, WO '208, *Held*, and optionally further in view of *Pozzo*, and further in view of either *Kunnemeyer* or *Hagstrom*.. Claim 8 includes all of the elements of claim 6, and further includes the element that the pressed mat provides a board having a pair of surface layers and a center layer, and the pair of surface layers and the center layer have substantially the same density. For the same reasons as stated above with respect to WO '932, *Gerhardt*,

Fischer, WO '208, and *Held*, Applicants submit that the prior art would not render claim 8 obvious. None of the additionally cited references teach or suggest the elements missing in WO '932, the primary reference, including the recitation that the pair of surface layers and the center layer have substantially the same density.

Hagstrom is directed to a device for use in a hydraulically-operated press and is not directed to a continuous process for making lignocellulosic containing boards. The Examiner argues that regardless of whether *Hagstrom* suggests forming a fiberboard in a continuous process, it would have been obvious in the art to form a uniform density fiberboard in a continuous manner. Applicants respectfully submit that even if it were notoriously common practice in the art to interchangeably apply a continuous or a batch manufacturing operation to form a fiberboard, which Applicants dispute, the disclosure of *Hagstrom* is still improperly combined with the other references cited in the absence of any teaching, suggestion or motivation to combine a process utilizing a hydraulically operated press to control a number of pressing sequences with the single step compression process using compression rollers of WO '932 or the teachings of any of the other references cited.

According to the process of *Kunnemeyer*, wood fiber boards from homogeneous fine wood dust and not, more generally, lignocellulosic particles. The Examiner argues that lignocellulosic particles reads on homogenous fine wood dust. Although lignocellulose-containing boards may be made by the method of the present invention from a mat including wood dust, the process of *Kunnemeyer* relies on the provision of wood dust layers covering both faces of wood fiber web prior to pressing.

There is no teaching, suggestion or motivation in any of the references cited that their teachings may be combined with a process that requires the formation of wood dust layers. Additionally, Applicants respectfully disagree with the Examiner that "as uniform a density distribution as possible" is equivalent to "substantially the same" density. There is no indication in *Kunnemeyer* that a board that has as uniform a density distribution as possible has substantially the same density among discrete layers, only that a uniform density distribution is desired. The most uniformness that is possible is acceptable according to the method of *Kunnemeyer*, and there is no indication of what the best possible uniform density could be achieved. Therefore, Applicants respectfully request that this rejection be reversed.

CONCLUSION

For the reasons set forth above, Applicant respectfully submits that this honorable Board should reverse all rejections on appeal, and issue a Notice of Allowance.

Dated: March 24, 2006

Respectfully submitted,

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APPENDIX A - CLAIMS

A copy of the claims on appeal is set forth below.

6. A method for continuously producing lignocellulose-containing boards comprising providing a mat of disintegrated, glue-coated and dried lignocellulose-containing material, pressing said mat into a board in a steam injection press, drawing a predetermined volume of air having a predetermined moisture content at a predetermined temperature through said board by means of suction applied through said board so as to condition said board, and grinding said conditioned board to a final thickness directly following said conditioning step.

7. The method of claim 6 wherein said conditioning of said board comprises a first conditioning of said board by drawing a first predetermined volume of air having a first predetermined moisture content at a first predetermined temperature through said board in a first direction by means of suction applied through said board, and including a second conditioning of said board by drawing a second predetermined volume of air having a second predetermined moisture content at a second predetermined temperature through said board in a second direction by means of suction applied through said board, wherein said second direction is opposite to said first direction.

8. The method of claim 6 wherein said pressing of said mat into said board provides a board having a pair of surface layers and a center layer, and wherein said pair of surface layers and said center layer have substantially the same density.

APPENDIX B - EVIDENCE

Appellant has not relied upon any evidence in this appeal.

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APPENDIX C - RELATED PROCEEDINGS

There are no related proceedings pending before the U. S. Patent and Trademark Office regarding this United States patent application.

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